

Letter from Charles R. Cox to Gilbert Grosvenor, November 30, 1907

Beinn Bhreagh, near Baddeck, Nova Scotia. November 30, 1907. Mr. Gilbert H. Grosvenor, 1328 18th Street, N. W., Washington, D. C. Dear Mr. Grosvenor:

Dr. A. Graham Bell has requested me to enclose typewritten copy of dictations copied from his Home Notes in relation to the daily experiments being carried on here pertaining to aerial locomotion. This enclosure covers experiments from Monday, Nov. 25 to Thursday Nov. 28, 1907.

It may be interesting to note that they are tackling all kinds of weather, and suffering all kinds of wettings in order to get the "Cygnet" into the air.

Very truly yours, Charles R. Cox Secretary.

96 1907, Nov. 29 Friday At Beinn Bhreagh.

(Dictation by A. G. B. to C. R. C. Copied from Home Notes by C. R. C. p. 160).

On Monday, Nov. 25, Baddeck Bay had very little wind upon it, but a strong white-cap e breeze was blowing up the great Bras D'or. Wind E.N.E. Telegram from Washington showed that my presence there on Dec. 3 would not be necessary, so we decided not to try the "Cygnet" until at least one successful experiment had been made with half-sized model. Mr. Bedwin had completed a light half-sized model suitable for use in a calm, or in a light breeze, and it was this model that was placed on the "Ugly Duckling" on Monday, Nov. 25, although the wind blowing up the Bras D'or was suitable for the heavier model. The Blue Hill has started on her trip before the Gaudrie reached the scene, so we had to

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accept the situation. I quite forgot that Mr. Bedwin had been instructed to send the kite up by the flying line alone with Douglas McCurdy's idea of the bow line slack as shown below:

This would have been all very well with the heavy model flying in an insufficient breeze, but was calculated to bring about a disaster with a lightly beaded model in a powerful wind, straining 2 97 the fragile structure unnecessarily at the moment of rising. The kite should have been raised under such circumstances by the bow line alone and little strain should have been put on the flying line until after the kite had risen to a considerable elevation in the air. However it is easy to reason after the event , T he Blue Hill had started and it was thought best to leave the experiment exclusively in the hands of Mr. Bedwin.

The Blue Hill passed up Baddeck Bay, and through Baddeck Harbor between Kidston's Island and Baddeck; the Gauldrie followed. Beyond Kidston's Island she turned in the direction of the Great Bras D'or, facing the wind which was very powerful accompanied by a tremendous sea. Anemometer reading on board the Gauldrie going full speed against the wind gave us a reading of 30 miles an hour.

When the tilting-frame of the "Ugly Duckling" was raised the kite shot up into the air and practically blew to pieces; the keel-stick was ripped out of her; the kite broke its back, and the kite structure settled gently upon the water in two parts which held together until they were recovered by the row-boat and "Ugly Duckling". It was only with difficulty that the pieces were recovered in the choppy-sea. The experiment was unsatisfactory so far as the kite was concerned, but the men certainly had great practice in recovering an injured kite from rough water. This concluded the experiment and we all returned to the Laboratory wet, and cold and tired out. The Laboratory staff at once went to work to make another light flying kite which we will reserve for calm weather or light wind experiments.

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98 Tuesday, Nov. 26, no experiments to-day. Cellular part of new kite completed.

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Wednesday, Nov. 27, no experiments this day; beading of new light kite completed.

Thursday, Nov. 28, a red letter day. Powerful wind from about W.S.W. too strong for light kite so tried the heavy model without load. The kite weighed 39 lbs., without the floats, so its flying weight without the floats was 584 or 586 grams per m (oblique.)

The Blue Hill started toward Baddeck and when about half way up the Bay the tilting-frame on the "Ugly Duckling" was elevated, and the kite rose gracefully into the air, and seemed to fly perfectly steadily. The Blue Hill passed with her tow between Kidston's Island and Baddeck, and entered St. Patrick's's channel where she experienced the full blunt of the wind and incident i ally, of the sea. The kite sailed gracefully along, although the silk surfaces had been thoroughly wet by the spray while on the "Ugly Duckling", so that I should estimate her flying weight as more nearly 800 grams per m ², than 586. The men on the "Ugly Duckling" were perfectly drenched in spray. On the Gauldrie, we also experienced continuous drenching, excepting Lieut. Selfridge, who kept most of the time under cover. Mr. Baldwin, Mr. Douglas McCurdy, Mr. Ingraham and I were soaked to the skin. My rubber overshoes were filled with water, which had trickled down my neck and under my clothes, so that I had to stand for nearly two hours with my feet in pools of cold water. The anemometer registered 31 miles an hour, when the Gauldrie was racing against 4 99 the wind. The water was so rough that Mr. Bedwin decided not to attempt to drop the kite until he could reach partial shelter from the land. The Blue Hill steered to the right after passing Stoney Island Island Islet but even when close to land could find no shelter. She then crossed the channel to the left and went up the channel to the left several miles, almost as far as the mouth of the Washabuck river. The waves were still high although somewhat sheltered by the land and the wind quite strong.

The kite was then released without a jerk; both flying line and bow line were let go, but the drag of the lines in the water kept the kite flying at an elevation of about 20 or 30 feet above the water. The kite drifted in this way for more than a minute and a half I should think, coming down very slowly and gently until she rested upon the surface of the water.

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The sea-anchor took the water well and held the kite in position facing the wind until rescued by the row-boat. The Blue Hill then towed the "Ugly Duckling" to the vicinity of the floating kite and to leeward of it and the men on the "Ugly Duckling" assisted by the men in the row-boat succeeded in lifting the kite quite uninjured on to the tilting-frame.

This is the first time that we have succeeded in carrying our program through from beginning to finish without a slip.

The moment the kite was safely hoisted on board the "Ugly Duckling", the Gauldrie started for the Central wharf, then miles away, for we were all drenched and cold, and wanted to get home as soon as possible. We telephoned from the Central Wharf to have four good hot baths prepared and four good doses of hot 5 100 whiskey toddy. The Lieut., Mr. Baldwin, Mr. McCurdy and I tumbled into hot baths the moment we arrived at home, swallowed our toddy and went to sleep. We suffered even more than the men on the "Ugly Duckling". We found a telephone message awaiting us from Dr. MacDonald, and the Hon. Sam Campbell, congratulating us upon our success. This morning none, either here or at the Laboratory seemed to have suffered from our rather rough experience, excepting Douglas McCurdy who has slight symptoms of a feverish cold, so we thought it best that he should remain not expose himself again to-day in further experiments.

Friday, Nov. 29, we have had another successful and gratifying experiment. The same kite was used as that employed yesterday. The wind was about from the same direction or perhaps due West. The Blue Hill went out into the little Bras D'or Lake beyond the Point and then headed for Baddeck against the wind. The wind as measured on the Gauldrie was about 28 miles an hour. The kite rose as before and flew very steadily. The Blue Hill was then slowed down, and while the kite was flying by the bow line alone, the slack of the flying line was brought over the "Ugly Duckling" and the men on the "Ugly Duckling" caught the line with a boat-hook. They then pulled down the kite into position on the "Ugly Duckling" without allowing it to go in the water at all. They then fastened in the kite a mass of lead weighing 7000 grams so that the flying weight was increased to the estimated

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flying weight of the "Cygnet" with a man in it flying weight was much greater because silk surfaces were thoroughly spray . Upon raising the tilting-frame the loaded kite rose gracefully into the air and flew very steadily and well. The kite was then released without a jerk and fell very 6 101 steadily and slowly on to the water. The sea-anchor took to the water well and held the kite head into the wind until the row-boat reached the kite and took charge of it. The Blue Hill while manoeuvring the "Ugly Duckling" into position for receiving the kite backed into the "Ugly Duckling". The stern of the Blue Hill fortunately missed the main structure, but crashed into the protruding arms of the tilting-frame. The damage however was not sufficiently great to prevent the "Ugly Duckling" from carrying the kite, which was safely lifted on to the tilting-frame without any injury. On board the Gauldrie we took the velocity of the wind while the loaded kite was in the air, and found it to be about 23 miles an hour. This of course represented the velocity of the wind plus the velocity of the Gauldrie. Thus ended the most successful experiment yet made. We are encouraged to believe that the large kite, the "Cygnet" with a man in her will be sustained in the air with a wind velocity not exceeding 23 miles. We are also satisfied that the men have been sufficiently trained to render it safe for us to try the "Cygnet" itself, and we propose to try the "cygnet" to-morrow if a suitable wind presents itself.